

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

WILLOW INNOVATIONS, INC.,

Plaintiff and Counterclaim-Defendant,

v.

CHIARO TECHNOLOGY, LTD.,

Defendant and Counterclaim-Plaintiff.

C.A. No. 2:23-cv-00229-JRG

**JURY TRIAL DEMANDED**

**ELVIE'S REPLY CLAIM CONSTRUCTION BRIEF**

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## I. INTRODUCTION

Willow confidently asserts that it was the “first to patent a discrete, under-the-bra wearable pump” and that it “broadly claimed a generic ‘pump mechanism’ that is agnostic to any one specific implementation.” None of that is true. Indeed, prior art cited against Elvie’s applications was cited against Willow too, and Willow was granted patent claims only on the device it actually invented. Willow’s new position in claim construction that it invented an in-bra device using any and every pump ever known is inconsistent with its prior representations—in its own internal communications, during prosecution, in the marketplace, and even previously in this case—that its invention is merely a compressible-tube-based wearable breast pump.

First, in its internal communications outside the context of litigation, Willow acknowledged that “[t]he flex tube is the heart of our system and we ask it to do a lot.” *See* Dkt. No. 82 at 1 (citing Ex. 1 at 6124). Next, during prosecution, Willow equated its claimed “pumping mechanism” to the compressible tube architecture depicted in the patents. *Id.* at 10 (citing Ex. 5 at 0159, 0193; Ex. I ¶¶ 67-68). Then, on its patent marking webpage, Willow identifies only its original compressible-tube breast pumps (Willow 1.0, 2.0, 3.0)—but *not* its new diaphragm breast pump (Willow Go)—as practicing its asserted patents.<sup>1</sup> Finally, previously in this very case, Willow identified only its compressible-tube breast pumps—and *not* its diaphragm breast pump—as practicing its asserted patents.<sup>2</sup> Only now, with its infringement reads questioned, does Willow pivot to assert that pumping mechanism can mean any pump ever known regardless of whether Willow actually invented—or indeed described or enabled—

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<sup>1</sup> *See* Ex. 12 (Willow’s Patent Webpage) at 1 (identifying only the Willow 1.0, 2.0, and 3.0 as practicing the asserted patents and *not* listing the asserted patents as covering Willow Go).

<sup>2</sup> *See* Ex. 8 (Willow’s Supplemental Local Rule 3-1 and 3-2 Disclosures) at 3, 6, 7, 9, 10, 11 (only identifying the Willow 1.0, 2.0, and 3.0, and *not the Willow Go device*, as practicing its asserted patents); Ex. 11 (Willow’s Response to Rog 15) at 26-28 (identifying the same).

anything else.

Willow also repeats its refrain that different pump types were well known, so a POSA would understand how to incorporate various pump types into its disclosed device. But repeating it does not make it so. Elvie's expert, Dr. Stone, provided extensive un rebutted testimony to the contrary, explaining that a POSA reviewing Willow's patents would understand non-peristaltic pumps to be unsuited for the disclosed application and form factor. Dkt. No. 82 at 2-3, 7-8 (Dr. Stone explaining that it would take "significant system changes" to incorporate another pump type into Willow's claimed invention).

Because Willow has now pivoted away from its old architecture and adopted Elvie's patented architecture in its new Willow Go product, Elvie was forced to assert its own patents in return. In response, Willow alleges indefiniteness of the claims it copied, but ignores and mischaracterizes both the intrinsic and extrinsic evidence, and interjects unsupported attorney argument in an attempt to create ambiguity where none exists.

*First*, regarding Elvie's proposed definition of a POSA, Willow falsely asserts that Elvie's definition does not reference mechanical engineering—but it does.

*Second*, regarding the "centre of gravity" term, Willow ignores (1) the '151 patent specification's many statements that explain that "when in use" means when generally upright and (2) the prosecution history where Elvie amended the claims to clarify the required orientation to overcome an indefiniteness rejection substantively identical to Willow's indefiniteness argument here. Instead, Willow cites to Elvie's expert testimony about the meaning of the term without reference to the '151 Patent—or any patent at all. Willow also cites the specification's disclosure about sensors that operate to detect when the user is lying down to show that "in use" also includes when lying down. However, Willow ignores the stated purpose

of the sensors—to ensure the user is generally upright when using the device.

*Third*, regarding the “single continuous surface” term, Willow’s argument is premised on attorney argument that certain lines and drawings of the ’151 patent illustrate solid or sharp edges on the surface at issue. This argument is not supported by expert testimony and contradicts the specification’s disclosure that the relevant surface is formed as one piece with no discontinuities or sharp edges.

In sum, a skilled artisan would have understood the scope of both terms with reasonable certainty as Elvie’s expert explained. *See* Ex. 6 at ¶¶ 112–16, 129–33.

## II. PERSON OF ORDINARY SKILL IN THE ART

Willow’s complaint about Elvie’s definition not referencing mechanical engineering is wrong. *See* Resp. Br. at 3. Elvie’s definition does explicitly reference a mechanical engineer:

“A skilled artisan as of the relevant priority date would have had at least an undergraduate or graduate degree in industrial design, **mechanical engineering**, electrical engineering, or related field, in combination with at least five years of related work experience developing medical or personal care devices. A higher level of education may compensate for less work experience and vice versa. **Also, a skilled artisan may have worked as part of a multidisciplinary team and drawn upon not only his or her own skills, but on the skills of others on the team, e.g., to solve a given problem.**”

Op. Br. at 9 (citing Ex. 6 at ¶¶ 31-36) (emphasis added). Despite Willow’s narrow focus on mechanical engineering, both Elvie’s and Willow’s patents incorporate technology from multiple related fields, including electrical engineering and product design. Indeed, Elvie addressed those realities by including industrial design, electrical engineering, multiple years of experience in medical or personal care devices, and working in a multidisciplinary team. Elvie also retained separate experts for design-related terms and mechanical/electrical engineering-related terms for just this reason. Moreover, Willow’s definition is not supported by any evidence, citing only Fletcher’s testimony that he is not a mechanical engineer.

### III. DISPUTED CONSTRUCTIONS

- A. **“a location of the centre of gravity of the breast pump device is, when in use, below a centre of the nipple tunnel when the milk container is empty” (’151 Patent, claim 1)**

Elvie’s proposal	Willow’s proposal
Not indefinite; plain and ordinary meaning	Indefinite

1. **A skilled artisan would understand “when in use” to have its plain and ordinary meaning, which is generally upright.**

The specification repeatedly identifies the device as being upright when in use: “when positioned upright for normal use.” Op. Br. at 12 (citing Ex. 3, 36:57, 38:5, 39:59, 40:48, 56:41, 64:17, 64:56, 65:25, 66:27). Likewise, the ’151 patent figures illustrate the device in an upright orientation. Op. Br. at 12–13 (citing Figs. 1–8). Willow ignores this disclosure and instead resorts to mischaracterizing the evidence and using unsupported attorney argument.

**(a) Willow misstates the prosecution history.**

Willow’s assertion (at 5) that the prosecution history does not support a construction that “when in use” means when generally upright, ignores the record. During prosecution, Elvie amended claim 1 to require the “when in use” orientation to overcome the examiner’s indefiniteness argument—the same one Willow raises now. *See* Op. Br. at 15 (citing Ex. 5 at 3-4, 8, 16). Tellingly, Willow does not even address this narrowing amendment.

**(b) Willow’s three-dimensional test argument is attorney argument and wrong.**

Willow’s three-dimensional test argument (at 5) is both baseless and wrong. Willow attempts to inject confusion by introducing an unsupported three- vs. two-dimensional test theory. But the centre of gravity and ways to determine it were well-known in the art. Ex. 6 at ¶ 114. Indeed, Willow agrees it is a matter of “simple physics” to determine the location of the centre of gravity. *See* Resp. Br. at 4. Moreover, a skilled artisan would understand what is above



and below a particular point, here, the centre of the nipple tunnel. *See* Ex. 6 at ¶113.

**(c) Willow mischaracterizes the '151 patent's sensor disclosure.**

Willow (at 5-6) points to the sensor described as detecting “walking, standing, or lying” activities in the specification as support for its argument that “when in use” includes lying down. But the patent makes clear that the very point of the sensor is to ensure the device is *not* used when the user is not generally upright. Indeed, the sensor is used to warn users or pause pumping if the mother is too reclined and there is risk of “imminent spillage.” *See, e.g.*, Ex. 3, 48:1–18 (listing various uses of the tilt angle to either warn the mother to change position or pause the pump to avoid spillage), 21:44–53 (same). In one embodiment, the tilt angle sensor causes the system to “automatically affect[] the operation of the system by warning or alerting the mother of a potential imminent spillage (e.g. from milk flowing back out of a breast shield)” if the tilt angle “exceeds a threshold.” *Id.* 48:1–5. The tilt angle sensor may also “adjust[] the operation of the system by stopping the pump to prevent spillage” when a threshold tilt angle is reached, and then “resume automatically” when the tilt angle falls back beneath the threshold. *Id.* 48:7–14. Accordingly, the sensor ensures the device is used only when generally upright.

Elvie’s alleged admission (at 6) that “lying” is included as an embodiment of “when in use” is overblown. Elvie only admitted that the light detection system disclosed in the specification is adaptable to be used in a range of generally upright positions understood by a skilled artisan, *see* Op. Br. at 16, including some where the user is “leaning back a little bit.” *See* Ex. 7, 155:6–11 (“[b]ased on the term ‘in use,’ it would be known that it would be in a generally upright position”), 158:5–9 (opining that “generally upright” encompassed “leaning back a little bit, leaning back a little bit forward or back and being straight up”); *see also id.* 157:13–14 (rejecting the proposition that a skilled artisan would have contemplated the use of breast pumps while the user is lying down).

**(d) Willow cherry-picks statements in the extrinsic evidence, ignoring related evidence that “when in use” means when generally upright**

Willow (at 2, 6 n.4) claims that in-bra breast pumps can be used in “a wide range of orientations, none of which are novel or unusual implementations of ‘when in use[.]’” But this statement is unsupported by any expert testimony and directly rejected by Mr. Fletcher repeatedly. *See* Ex. 7, 155:6–11 (“[b]ased on the term ‘in use,’ it would be known that it would be in a generally upright position”), *id.* at 155:14–16 (“as one who has designed many breast pumps the term ‘in use’ would be understood to be generally upright”). Willow (at 6-7) relies on commercial embodiments as extrinsic evidence for this proposition, but user guidance for both the Elvie Pump and Willow Go demonstrates that Willow’s compressible tube architecture—which is not implemented in either the Elvie Pump or the Willow Go—is the only architecture in which “when in use” would *include* lying down. *See* Elvie Tech. Tutorial at 4:52-5:20 (describing Willow’s original compressible-tube architecture), 5:31-5:57 (describing the diaphragm architecture, which is used in the Elvie Pump and Willow Go); *see also id.* at 4:37.

For example, Willow purports to rely on an FAQ webpage for the Elvie Pump that states users can pump “in whatever position you like as long as functioning properly.” But Willow ignores the caveat that the device must be “functioning properly.” Indeed, Elvie’s manual explicitly says it is “not intended for use lying down.” Ex. 9 at 14, 35. Further, the Elvie Pump is “designed to be worn with your standard nursing bra and you can use it in either a sitting or standing position.” *Id.* at 31. The FAQ also clarifies that whether the pump is “functioning properly” depends on “how the pump sits on your breast,” which further supports the importance of the centre of gravity being below the centre of the nipple tunnel. *See* Op. Br. at 13–14 (explaining how the location of the centre of gravity ensures the device does not rotate away from the top of the breast).

As Willow admits, the Willow Go “allows a user to ‘[s]it, stand, or bend up to 45° without [the product] leaking.’” Resp. Br. at 6–7 (citing <https://shorturl.at/gaLIy>). None of these positions are when the user is lying down flat. Thus, Willow’s position is belied by its own Willow Go product—launched years after Willow’s original compressible-tube architecture Pump (and after Elvie’s pump)—that does not allow users to pump in “a wide range of orientations,” (i.e., lying down) despite these orientations not being “novel or unusual” for in-bra breast pumps. Rather, the range of orientations for use of the Willow Go are aligned with Fletcher’s description of “generally upright.”

**(e) The cited Dr. Stone testimony is not relevant.**

With no expert testimony supporting its own position that this simple claim term is indefinite, Willow resorted to questioning Elvie’s experts about topics outside of their respective remits in an effort to pit them against one another. *See* Resp. Br. at 4, 6. Dr. Stone did not review Elvie’s patents, let alone provide opinions regarding Elvie’s ’151 patent or this disputed claim term. *See* Ex. 10, 162:16–20. It is axiomatic in patent law that “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). Because Dr. Stone did not review the claim in which this term appears or even the patent itself, Willow’s questioning of Dr. Stone outside the scope of his assignment is not relevant to how a skilled artisan would read this claim term. Willow could have had its retained technical expert provide an opinion that a skilled artisan would not understand this claim term in view of the claims and specification. For whatever reason, it chose not to. It cannot now make up for it with out-of-context questioning of Elvie’s expert who provided testimony on entirely different subject matter.

Regardless, Elvie’s experts do agree on the centre of gravity. An object has one center of

gravity, and the position of the center of gravity does not change regardless of the object's orientation. *Compare* Ex. 6 at ¶ 114 (“Every object has a centre of gravity”), ¶ 115 (“centre of gravity of an object does not change with orientation or location”) *with* Resp. Br. at Ex. V, 162:21-163:9 (explaining that an object has a “particular” center of gravity regardless of position). And any alleged differences in their understanding of “upright” is a result of different contexts between Elvie's and Willow's patents. Indeed, Dr. Stone explained that his understanding of upright was dependent on the claim language and context of the patents he reviewed. *See, e.g.*, Ex. 10 at 67:1–19, 69:2–70:12.

**2. The position of the centre of gravity relative to the centre of the nipple tunnel is measured when generally upright.**

Willow (at 7) argues that Mr. Fletcher agrees that the relative position of the centre of gravity changes with orientation, but selectively quotes his statement to omit that “from the earth's point of view” is not how a skilled artisan would measure the centre of gravity in the context of the '151 patent. *See* Ex. 7, 160:22–161:6.

Willow wrongly implies that flipping of the design on its side is expected. But again, the claims and specification both make clear that “in use” means upright. *See also* Op. Br. at 12-15. And, as discussed above, this is exactly the orientation the examiner used to initially reject claim 1 for indefiniteness in the file history, leading Elvie to amend the claim to overcome the rejection by adding “when in use.” *See id.* at 15.

This sidewise orientation also conflicts with the specification. For example, in such an orientation, milk would not flow into the milk container under gravity as described numerous times in the specification. *See, e.g.*, Ex. 3, 14:1–3 (“When the negative air pressure is released, the valve 37 opens and milk flows under gravity past the valve 37 and into milk container 3.”), 61:8–15 (“milk flows under gravity through the opening into the milk container.”), 61:44–48

(same), 62:11–15 (same). And, as discussed above, the Elvie Pump manual explicitly instructs users *not* to use the device while lying down. *See supra* IV(1)(A)(d).

Willow cites *Pacific Coast* to support its argument, but that case is inapposite. The “scored flexural strength” from *Pacific Coast* is a measure that gives four different values depending on the direction of the forces exerted on the object. Here, measurement of the position of the centre of gravity relative to the centre of the nipple tunnel is always measured the same—when the device is generally upright. Further, in contrast to the four flexural strengths at issue in *Pacific Coast*, there is only one centre of gravity to measure, and the position of the centre of gravity relative to other components, including the nipple tunnel does not change when the milk container is empty. *See* Op. Br. at 17 (citing Ex. 6 at ¶ 115, Ex. 7 at 160:16–22). Elvie’s un rebutted expert testimony on this point is clear. *Id.*

For the reasons explained in Elvie’s opening brief, Op. Br. at 10–18, and supported by the un rebutted expert testimony of Mr. Fletcher, Ex. 6 at ¶¶ 112–16, a skilled artisan would have understood the scope of this term with reasonable certainty and, thus, it is not indefinite.

**B. “a single continuous surface” (’151 Patent, claim 22)**

Elvie’s proposal	Willow’s proposal
Not indefinite; plain and ordinary meaning	Indefinite

Willow professes confusion about whether feature 7B, depicted in Figs. 2, 4, and 6, must be curved. Resp. Br. at 10–11. But Willow’s assertion that “such solid lines typically indicate a solid edge—rather than a curved surface” is unsupported attorney argument. *Id.* Willow does not—and cannot—point to any evidence indicating that assumption is appropriate in any circumstance, let alone here where the intrinsic evidence is clear that it is not the case.

Indeed, the specification is clear that feature 7B is “curved.” Ex. 3, 9:30–31 (“Breast

shield nipple tunnel 9 extends from a curved section 7B in the breast shield 7.”), 9:34–35 (“[c]urved section 7B”), 13:63–65 (“curved opening 7B of the breast shield 7 that contacts the breast.”). Figs. 2, 4, and 6 all illustrate the same feature 7B that is specifically “curved” and marks the transition from the flange to the nipple tunnel. *See also* Op. Br. at 19–20 (explaining that the flange and nipple tunnel are illustrated as forming parts of a “one-piece breast shield” with “no discontinuities.”); Ex. 6 at ¶¶ 130–33.

Willow next argues that Elvie’s annotated Fig. 3 shows “sharp edges” due to a “90-degree angle” between the nipple tunnel and breast shield. *See* Resp. Br. at 11. Yet again, Willow relies on unsupported attorney argument to assign attributes to the figure that are simply not found. Both Figs. 3 and 5 demonstrate the seamless transition from breast shield to nipple tunnel when Elvie’s tech tutorial annotations are removed (i.e., as they are in the specification). Only the lines demonstrating the projection of the nipple tunnel from the breast shield are included—there are no lines suggesting some “sharp edge” between the breast shield and nipple tunnel. *See* Ex. 7, 167:15–168:11 (explaining what a single continuous surface means in the context of the patent); 170:3–9 (confirming that surfaces are continuous “if the [edge separating the surfaces] has a radius greater than zero”); Ex. 6 at ¶¶ 131–32 (explaining how the specification and figures demonstrate that a single continuous is a one-piece structure without any surface discontinuities).

In summary, there are no “sharp edges” at the transition from the breast shield to the nipple tunnel. Willow’s mistaken attorney argument reading “sharp edges” into the ’151 patent distorts the specification and figures. The intrinsic evidence—as confirmed by Mr. Fletcher—is clear that the transition between the breast shield and milk tunnel is curved and continuous.

#### **IV. CONCLUSION**

For the foregoing reasons, the Court should adopt Elvie’s proposed constructions.

Dated: August 29, 2024



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Nirav N. Desai (*pro hac vice*)

Kyle Conklin (*pro hac vice*)

Josephine Kim (*pro hac vice*)

Alexander Covington (*pro hac vice*)

Joseph Kim (*pro hac vice*)

Alex Alfano (*pro hac vice*)

Michael Webb (*pro hac vice*)

Paige Cloud (*pro hac vice*)

Zachary Jacobs (*pro hac vice*)

Christopher Coleman (*pro hac vice*)

**STERNE, KESSLER, GOLDSTEIN & FOX**

1101 K Street NW, 10<sup>th</sup> Floor

Washington, DC 20005

Melissa R. Smith

State Bar No. 24001351

**GILLAM & SMITH LLP**

303 South Washington Ave.

Marshall, Texas 75670

*Attorneys for Defendant Chiaro Technology,  
Ltd.*

**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that counsel of record who are deemed to have consented to electronic services are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on August 29, 2024.

/s/ Melissa R. Smith

Melissa R. Smith

State Bar No. 24001351

**GILLAM & SMITH LLP**

303 South Washington Ave.

Marshall, Texas 75670

*Attorney for Defendant Chiaro Technology, Ltd.*